

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2004/003534

International filing date (day/month/year)
16.08.2004

Priority date (day/month/year)
15.08.2003

International Patent Classification (IPC) or both national classification and IPC
E04C3/29, E04C3/14, E04B1/76

Applicant
THE COURT OF NAPIER UNIVERSITY

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

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10/568293
IAP9 Rec'd PCT/PTO 15 FEB 2006
International application No.
PCT/GB2004/003534

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
 - ☐ This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
 - ☐ a sequence listing
 - ☐ table(s) related to the sequence listing
 - b. format of material:
 - ☐ in written format
 - ☐ in computer readable form
 - c. time of filing/furnishing:
 - ☐ contained in the international application as filed.
 - ☐ filed together with the international application in computer readable form.
 - ☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**International application No.
PCT/GB2004/003534**Box No. II Priority**

- 1.
- ☒
- The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

- 2.
- ☐
- This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	14-17, 19
	No: Claims	1-13, 18, 20-30
Inventive step (IS)	Yes: Claims	
	No: Claims	14-17, 19
Industrial applicability (IA)	Yes: Claims	1-30
	No: Claims	

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

PCT/GB2004/003534

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

- 1 Reference is made to the following documents, cited in the International Search Report:

D1: EP-A-0 062 139 (UNIV MICHIGAN TECH) 13 October 1982 (1982-10-13)
D2: WO 91/02865 A (LARSSON BJOERN) 7 March 1991 (1991-03-07)
D3: US-A-5 966 894 (CRUMP JR PRESTON L) 19 October 1999 (1999-10-19)
D4: DE 297 15 705 U (HINTERMAYR STEFAN) 4 December 1997 (1997-12-04)
D5: FR-A-2 770 865 (BROUILLARD LAURENT) 14 May 1999 (1999-05-14)
D6: GB 825 399 A (ERIC SIGFRID PERSSON) 16 December 1959 (1959-12-16)
D7: US-A-5 865 929 (SING PETER) 2 February 1999 (1999-02-02)
D8: FR-A-2 747 708 (MALVY MARTIAL) 24 October 1997 (1997-10-24)
D9: FR-A-2 554 482 (BLANVILLAIN FILS ETS) 10 May 1985 (1985-05-10)
D10: US-A-5 653 080 (BERGERON RONALD) 5 August 1997 (1997-08-05)
D11: US-A-5 625 996 (BECHTEL FRIEND K) 6 May 1997 (1997-05-06)
D12: GB-A-1 334 794 (COBETON AG) 24 October 1973 (1973-10-24)

- 2 The present application does not meet the criteria of Article 33(1) PCT, because
- the subject-matter of claims 1-13, 18, 20-30 is not new (Article 33(2) PCT) and
 - the subject-matter of claims 14-17, 19 does not involve an inventive step (Article 33(3) PCT).
- the reasons being as follows:

- 2.1 D1 is regarded as being the closest prior art.

Claims 1-24

- 2.2 D1 discloses (fig. 5; page 8, paragraph 3 - page 9, last paragraph):
- a) a structural support beam 40 for use in building and construction (page 1, paragraph 1)
 - b) comprising a support frame defining at least one volume 46,
 - c) said support frame being of a first material ("... composite wood material ...") and
 - d) said at least one volume 46 being in-filled with a second material 48 ("... polyurethane foam ...").

Hence, the subject-matter of the independent claim 1 is not new.

- 2.3 Each of the documents D2-D9 also discloses the features of claim 1.

**WRITTEN OPINION OF THE
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International application No.

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- 2.4 The additional features of the dependent claims 2-13, 18, 20-24 are also known from the documents D1-D9, see the corresponding passages cited in the international search report. Hence, the subject-matter of these claims is also not new.
- 2.5 Inasmuch as the additional features of the dependent claims 14-17, 19 are not directly known from the documents D10-D12 (see the corresponding passages cited in the international search report), they concern only minor modifications which lie within the normal practice of the person skilled in the art, especially as the advantages thus achieved can readily be foreseen. Consequently, the subject-matter of these claims lacks an inventive step.

Claims 25-27

- 2.6 D1 discloses (fig. 5; page 8, paragraph 3 - page 9, last paragraph):
- a) a structural support beam 40 for use in building and construction (page 1, paragraph 1)
 - b) comprising a timber based support frame ("... composite wood material ...") formed from two spaced apart rectangular flanges 42 connected by at least two outer support webs 42
 - c) wherein the timber based support frame defines at least one volume 46 in-filled with a plastics foam 48 ("... polyurethane foam ...");
 - d) and wherein the plastics foam material 48 is bonded to the flange and the webs ("... forming an adhesive bond with the internal surfaces 50 of the panels ...").
- Hence, the subject-matter of the independent claim 25 is not new.
- 2.7 Each of the documents D2, D5 also discloses the features of claim 25.
- 2.8 The additional features of the dependent claims 26-27 are also known from D1, D2 or D5, see the corresponding passages cited in the international search report. Hence, the subject-matter of these claims is also not new.

Claims 28-30

- 2.9 D1 discloses (fig. 5; page 8, paragraph 3 - page 9, last paragraph)
- a) a method of manufacturing the structural support beam 40 claim 1,
 - b) said method comprising the steps of:
 - b1) connecting two spaced apart flanges 42 by means of at least two outer support webs 42 to form a support frame defining at least one volume 46 (page 9, paragraph 2; also page 6 - 7); and
 - b2) filling said at least one volume 46 with an infill of material 48.

**WRITTEN OPINION OF THE
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AUTHORITY (SEPARATE SHEET)**

International application No.

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Hence, the subject-matter of the independent claim 28 is not new.

2.10 Each of the documents D2, D5 also discloses the features of claim 28.

2.11 The additional features of the dependent claims 29-30 are also known from D1, D2 or D5, see the corresponding passages cited in the international search report. Hence, the subject-matter of these claims is also not new.

3 The subject-matter of claims 1-30 is industrially applicable (Article 33(4) PCT).

4 Upon continuation of the procedure, the applicant is invited to consider the following points:

4.1 To meet the requirements of Rule 6.3(b) PCT, the independent claims should be properly cast in the two part form, with those features which in combination are part of the corresponding closest prior art being placed in the preamble.

4.2 Reference signs in parentheses should be inserted in the claims to increase their intelligibility; this applies to both the preamble and characterising portion (Rule 6.2(b) PCT).

4.3 The description must be brought into conformity with the new claims to be filed (Rule 5.1(a)(iii) PCT); care should be taken during revision, especially of the introductory portion including any statements of problem or advantage, not to add subject-matter which extends beyond the content of the application as originally filed (Article 34(2) PCT).

4.4 To meet the requirements of Rule 5.1(a)(ii) PCT, documents D1-D9 should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

4.5 In order to expedite the procedure and to facilitate the examination of the conformity of the amended application with the requirements of Article 34(2) PCT, the applicant is requested to clearly identify all amendments carried out, irrespective of whether they concern amendments by addition, replacement or deletion, and to indicate the passages of the application as filed on which each of these amendments are based (Rule 66.8 (b) PCT).

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P34813A/AHO/SMI	FOR FURTHER ACTION see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2004/003534	International filing date (day/month/year) 16/08/2004	(Earliest) Priority Date (day/month/year) 15/08/2003
Applicant THE COURT OF NAPIER UNIVERSITY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the International search was carried out on the basis of the International application in the language in which it was filed, unless otherwise indicated under this item.

☐ The International search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any nucleotide and/or amino acid sequence disclosed in the International application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box II).

3. ☐ Unity of invention is lacking (see Box III).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this International search report, submit comments to this Authority.

6. With regards to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 2, 5A

☐ as suggested by the applicant.

☐ as selected by this Authority, because the applicant failed to suggest a figure.

☒ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

International Application No

PCT/GB2004/003534

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 E04C3/29 E04C3/14 E04B1/76

According to international Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 E04C E04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 91/02865 A (LARSSON BJOERN) 7 March 1991 (1991-03-07) the whole document	1-3, 6, 8, 9, 20-25, 27-30
X	EP 0 062 139 A (UNIV MICHIGAN TECH) 13 October 1982 (1982-10-13) the whole document	1-3, 9, 10, 20-30
X A	US 5 966 894 A (CRUMP JR PRESTON L) 19 October 1999 (1999-10-19) the whole document	1, 2, 6, 8, 9, 20-24 25, 27, 28, 30
X A	DE 297 15 705 U (HINTERMAYR STEFAN) 4 December 1997 (1997-12-04) the whole document	1-3, 6, 8-10, 20, 22-24 28-30
-/-		

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

Z document member of the same patent family

Date of the actual completion of the international search

22 November 2004

Date of mailing of the international search report

30/11/2004

Name and mailing address of the ISA

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Authorized officer

Vratsanou, V

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2 770 865 A (BROUILLARD LAURENT) 14 May 1999 (1999-05-14) the whole document	1-3,6, 8-10,20, 22-30
X	GB 825 399 A (ERIC SIGFRID PERSSON) 16 December 1959 (1959-12-16) the whole document	1,2,4,5, 9,20,22, 24
X A	US 5 865 929 A (SING PETER) 2 February 1999 (1999-02-02) the whole document	1,2,5,9, 20,22-24 25,27, 28,30
X A	FR 2 747 708 A (MALVY MARTIAL) 24 October 1997 (1997-10-24) page 5, line 4 - page 11, line 15; figures 1,2,8	1,2,4-9, 20-24 25-30
X Y	FR 2 554 482 A (BLANVILLAIN FILS ETS) 10 May 1985 (1985-05-10) page 3, lines 3-8 pages 4-6; figures 2,3	1-3,6,8, 9,11-13, 18-20, 22,24 14
Y	US 5 653 080 A (BERGERON RONALD) 5 August 1997 (1997-08-05) column 3, line 29 - column 4, line 63; figures 1a,1b,2d	14
A	US 5 625 996 A (BECHTEL FRIEND K) 6 May 1997 (1997-05-06) figures 1-4	15-17
A	GB 1 334 794 A (COBETON AG) 24 October 1973 (1973-10-24) figures 1-3	15,17

Information on patent family members

International Application No

PCT/GB2004/003534

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 9102865	A	07-03-1991	AU 6188090 A EP 0487580 A1 JP 5501433 T WO 9102865 A1	03-04-1991 03-06-1992 18-03-1993 07-03-1991
EP 0062139	A	13-10-1982	AT 14032 T DE 3264351 D1 EP 0062139 A2 FI 820675 A ,B, NO 820638 A	15-07-1985 01-08-1985 13-10-1982 04-10-1982 04-10-1982
US 5966894	A	19-10-1999	NONE	
DE 29715705	U	04-12-1997	DE 29715705 U1	04-12-1997
FR 2770865	A	14-05-1999	FR 2770865 A1	14-05-1999
GB 825399	A	16-12-1959	NONE	
US 5865929	A	02-02-1999	US 5618371 A AU 6389596 A CA 2225350 A1 EP 0853534 A1 WO 9700763 A1 US 5896723 A	08-04-1997 22-01-1997 09-01-1997 22-07-1998 09-01-1997 27-04-1999
FR 2747708	A	24-10-1997	FR 2747708 A1	24-10-1997
FR 2554482	A	10-05-1985	FR 2554482 A1	10-05-1985
US 5653080	A	05-08-1997	NONE	
US 5625996	A	06-05-1997	NONE	
GB 1334794	A	24-10-1973	DE 1958002 A1 CH 532701 A FR 2067364 A1 NL 7016326 A	27-05-1971 15-01-1973 20-08-1971 21-05-1971

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